

We Claim:

1. A device for attachment to the penis of an individual for receiving urine and delivering the urine to a collection chamber comprising a sheath non-permeable to urine, the sheath being cylindrically shaped when fully applied to the penis, the cylindrical sheath having an inner surface and an outer surface and having:

a first end opening sized to receive at least a portion of the length of a penis and a second end spaced from said first end including a hollow connector sealed therein, the hollow connector configured to mate with a second hollow connector attached to the collection chamber, the distance between the first end and the second end being sufficient to enclosed at least the glans of the penis, and carry securement means on the interior and exterior surface at the first end, the securement means encircling the penis above the glans, the securement means comprising a polymeric gel strip and a elastic securement tape, the sheath having an upper surface with an opening extending longitudinally from the first open end at least a portion of the distance between the first end and the second end, the polymeric gel strip adhesively attached to an upper circumferential portion of the inner surface of the sheath adjacent the first end opening of the sheath, the gel strip comprising a polymeric gel material impervious to urine, having a skin contact surface which provides adhesion to the skin surface of the penis but is readily removable there from without leaving residual gel material on the surface of the penis, the gel material being stretchable and contractible after application to the penis to an extent substantially similar to changes in circumference or length of the penis after application without compromising adhesion to the sheath or penile skin surface or allowing urine leakage, said gel strip skin contact surface having a removable barrier material covering said contact surface, the barrier removable during placement of the sheath on the penis,

the elastic securement tape having a first end attached to an upper circumferential portion of the outer surface of the sheath adjacent the first end opening of the sheath, the tape oriented to be wrapped circumferentially around the sheath, said securement tape having attachment means extending along the length of an inner surface thereof so that upon wrapping said tape around the upper circumferential surface of the sheath the tape

becomes adhered to the sheath, secures the sheath to the penis placed therein and closes the opening extending longitudinally from the first open end at least a portion of the distance between the first end and the second end in a leak proof manner.

2. The device of claim 1 further including slotted tabs extending from an upper edge of the sheath for placement of adjustable straps there through, the adjustable straps also passing through slots in a ring encircling the base of the penis.

3. The device of claim 2 wherein the ring is retained on the individual by multiple belts encircling the waist and thighs of the individual.

4. The device of claim 1 wherein the hollow connector comprises a tubular male coupling of a predetermined outer diameter an intermediate portion of the outer surface of the coupling having a raised boss encircling the connector, the tubular mail coupling being sized to be received within the second hollow connector attached to the urine collector.

5. The device of claim 4 wherein the second hollow connector is a tubular female coupler having two or more longitudinal slots along a portion of a first end thereof forming outwardly tapering tangs there between and an intermediately positioned, internally concave positioning boss, the inner diameter of the tubular female coupler and internally concave positioning boss sized to mate with the male coupling in a leak-proof manner, the second end of the female coupler being attached to a urine collection means.

6. The device of claim 5 wherein the urine collection means comprises tubing attached to a urine collection container, the tubing also being attached to a second end of the female coupler.

7. The device of claim 5 further including an encircling, sliding locking collar sized for locking placement over the boss on the male coupler and the female coupling after engagement thereof.

8. The device of claim 1 further including a one way flow valve positioned at or below the second end of the sheath, the one way valve configured to allow urine to flow from the sheath to the collection chamber but to prevent urine from flowing from the collection chamber into the sheath.

9. The device of claim 8 wherein the one way valve includes first and second flat leaflet portions, said leaflet portions positioned at their lower end in contact each other for urine to flow between the leaflets and through said lower end.
10. The device of claim 8 wherein the one way flow valve is positioned within a lumen of the hollow connector.
11. The device of claim 1 wherein the polymeric gel strip comprises a compliant, viscous, stretchable, gelatinous polymeric material, said material being resistant to swelling, absorption, erosion, permeation when exposed to urine and inherently adherent to skin surfaces, the gel strip having, on a sheath contacting surface, a double sided adhesive strip comprising a first adhesive which bonds to the gelatinous polymeric material and a second adhesive which bonds to the inner surface of the sheath, the double sided adhesive strip function to permanently secure the gelatinous polymeric material to the sheath.
12. The device of claim 11 wherein the gelatinous polymeric material comprises a 2-component silicone material.
13. The device of claim 11 wherein the polymeric gel material has a modulus of elongation and a shear strength such that the gel material will elongate an amount equal to expansion of the penis during normal usage without the gel material separating, the adhesion to the skin is not compromised and leakage is prevented.
14. The device of claim 1 wherein the removable barrier material covering the gel strip skin contact surface has perforations therein which allow penetration of the gel material there through prior to removal of the barrier material for application to a skin surface.
15. The device of claim 1 wherein the elastic securement tape comprises an elastic, polymeric base material having an adhesive on a sheath contacting surface for attaching the securement tape to the outer surface of the sheath.
16. An improved sheath for application to the penis of an incontinent individual including retention means wherein the improvement comprises multiple retention means comprising a strip of a gelatinous material on an inner circumferential upper surface of the sheath, an elastic securement means on the upper surface of the sheath encircling the

sheath and over the gelatinous material and a strap system extending from an upper end of the sheath and attached to the incontinent individual,

said gelatinous material comprising a compliant, viscous, stretchable, gelatinous polymeric material, said material being resistant to swelling, absorption, erosion, permeation when exposed to urine and inherently adherent to skin surfaces,

said elastic securement means comprising an elastic, polymeric base material having an adhesive on a sheath contacting surface for attaching the securement tape to the outer surface of the sheath and

said strap system extending from an upper end of the sheath comprising a pair of securing straps attached at a first end to an upper end of the sheath and at a second end to a retaining ring positioned at the based of the penis, the retaining ring being held in place by right and left leg straps and pair of connectable waist encircling straps.

17. The improved sheath of claim 16 wherein the gel strip has, on a sheath contacting surface, a double sided adhesive strip comprising a first adhesive which bonds to the gelatinous polymeric material and a second adhesive which bonds to the inner surface of the sheath, the double sided adhesive strip permanently securing the gelatinous polymeric material to the sheath.

18. The device of claim 16 wherein the gelatinous polymeric material comprises a 2-component silicone material.

19. The device of claim 16 wherein the polymeric gel material has a modulus of elongation and a shear strength such that the gel material will elongate an amount equal to expansion of the penis during normal usage without the gel material separating, the adhesion to the skin is not compromised and leakage is prevented.

20. The device of claim 16 further including a removable barrier material covering a gel strip skin contact surface, said removable barrier material having perforations therein which allow penetration of the gel material there through prior to removal of the barrier material for application to a skin surface.

21. The device of claim 16 wherein the elastic securement tape comprises an elastic, polymeric base material having an adhesive on a sheath contacting surface for attaching the securement tape to the outer surface of the sheath.

22. A method of applying a urine collection sheath to the penis of an individual comprising:

a) providing a cylindrical sheath having an inner surface and an outer surface, the cylindrical sheath having a first end opening sized to receive at least a portion of the length of a penis and a second end spaced from said first end including a hollow connector sealed therein, the distance between the first end and the second end being sufficient to enclose at least the glans of the penis and to carry securement means at the first end above the glans comprising a polymeric gel strip and an elastic securement tape, the sheath having:

i) an upper surface with an opening extending longitudinally from the first open end at least a portion of the distance between the first end and the second end,

ii) the polymeric gel strip adhesively attached to an upper circumferential portion of the inner surface of the sheath adjacent the first end opening of the sheath, said gel strip having a skin contact surface with two pieces of removable barrier material covering left and right halves of the contact surface, and

iii) the elastic securement tape with a first end attached to an upper circumferential portion of the outer surface of the sheath adjacent the first end opening of the sheath, the tape oriented to be wrapped circumferentially around the sheath

b) placing the penis in the sheath with the glans of the penis located within the sheath between the removable barrier covered polymeric gel strip and the sheath second end,

c) grasping both pieces of barrier material at a point farthest removed from the opening extending longitudinally from the first open end and simultaneously removing said pieces of barrier material while applying an upward force on the sheath against the penile shaft, causing the left and right halves of the gel strip to contact and adhere to the skin surface of the penis, and

d) wrapping the securement tape circumferentially around the outer surface of the sheath, simultaneously forming a leak proof closure of the opening extending longitudinally from the first open end, adhering the securement tape to the outer surface of the sheath and applying compressive forces to the sheath, gel strip and penis enclosed in the sheath, forming a leak-proof cylindrical sheath secured in a leak-proof manner to the penis.

23. The method of claim 22 wherein the sheath has a pair of attachment slots on the first end of the sheath, said method further including attaching the sheath, using a first pair of straps to a body mounted ring encircling the penis, said body mounted ring secured to the user by placing a first encircling strap or pair of straps around the users waist and left and right leg encircling straps around the users left and right legs, respectively.

24. The method of claim 22 wherein the sheath has a pair of attachment slots on the first end of the sheath, said method further including attaching the sheath to a body mounted ring encircling the penis by passing cantilever arms on the ring through loops formed in tabs on the first end of the sheath.

25. The device of claim 1 further including looped tabs extending from an upper edge of the sheath, the looped tabs sized to receive cantilever arms extending from a body mounted ring encircling the penis.